<u>AMENDMENTS TO THE CLAIMS</u>

The listing of claims will replace all prior versions and listings of claims in the application:

<u>Listing of Claims:</u>

1.   **(Currently Amended)**   An analyzer for capturing activity on a transmission medium, comprising:

[[(a)]]a data input port <u>configured to receive</u> ~~for receiving~~ the activity from the transmission medium, wherein the data input port includes <u>signal conversion logic</u> ~~an adaptor pod~~ <u>configured</u> <u>to convert</u> ~~for converting~~ a signal type used by the transmission medium to a signal type used by the analyzer and wherein the <u>signal conversion logic</u> ~~adaptor pod~~ is further configured to <u>index at least a portion of the transmission medium activity;</u>~~at least partially aid in the performance of decoding, triggering, filtering or statistical functions,~~

<u>a control port for controlling modes of operation of the analyzer and for accepting user-defined patterns of activity for triggering; and</u>

[[(b)]]replay logic <u>configured to receive</u> ~~for receiving~~ the <u>transmission medium</u> activity from the data input port<u>, receive</u> ~~and receiving~~ stored activity from a trace buffer<u>, and select</u> ~~sending out~~ one or the other of <u>the transmission medium activity and the stored activity to output</u> ~~these activities~~ to [[the]]trigger logic, but not both<u>; and</u>[[,]]

<u>trace buffer control logic configured to cause activity received by said replay logic to be read from or written to said trace buffer,</u>

[[(c) a]]<u>wherein said</u> trace buffer <u>is configured to receive at least a portion of the transmission medium</u> ~~for receiving~~ activity from said replay logic<u>, store the at least a portion of transmission medium activity,</u> ~~and storing it, and~~ <u>send</u> ~~for sending~~ stored activity to said replay logic<u>,</u> and [[to]]<u>send stored activity to</u> a data output port<u> for processing or display,</u> <u>and</u>

[[(d)]]<u>wherein said</u> trigger logic <u>is configured to compare a</u> ~~for comparing~~ [[the]]pattern of activity <u>received by</u> [[from]]the replay logic with a <u>first</u> user-defined pattern of activity and <u>to</u> indicate ~~indicating~~ when <u>the comparison results in a</u> [[they]]match<u>.</u>[[,]]

~~(e) trace buffer control logic for causing activity from said replay logic to be either read from or written to said trace buffer,~~

~~(f) a data output port for transferring stored activity in the trace buffer elsewhere for processing or display, and~~

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~~(g) a control port for controlling modes of operation of the analyzer and for accepting user-defined patterns for triggering.~~

2.   **(Original)**   An analyzer as recited in claim 1 wherein said trace buffer control logic includes logic for overwriting previously stored activity with new activity.

3.   **(Original)**   An analyzer as recited in claim 1 wherein said trace buffer control logic includes logic for avoiding overwriting previously stored activity with new activity.

4.   **(Currently Amended)**   An analyzer as recited in claim 1 further comprising selective capture logic <u>adapted to cause</u> ~~for causing~~ the trace buffer control logic to cause [[the]]activity from the replay logic to be written to the trace buffer only when the activity from said replay logic matches a second user-defined pattern of activity.

5.   **(Currently Amended)**   An analyzer as recited in claim 4 wherein said selective capture logic is <u>further adapted to cause</u> ~~capable of causing~~ information about the type of activity from the replay logic that caused the activity to be written to said trace buffer to be incorporated into the activity stored in the trace buffer.

6.   **(Currently Amended)**   An analyzer as recited in claim 4 further comprising a timestamp counter for creating information about <u>a</u> [[the]]time of occurrence of each activity event from the replay logic, so that such information may be incorporated into [[the]]activity stored in said trace buffer<u>,</u>

    <u>wherein said trigger logic is adapted to use time counters such that the pattern comparison is based on a relative time of occurrence of an activity event as indicated by the time counters, and</u>

    <u>wherein said replay logic uses said stored time-of-occurrence information to control a replay timing</u>.

7.   **(Canceled)**

8.   **(Currently Amended)**   An analyzer as recited in claim 6 wherein said replay logic uses the stored time-of-occurrence information to control a replay timing.~~the timing of the replay.~~

9.   **(Currently Amended)**   An analyzer as recited in claim 8[[9]] further comprising a replay output port for sending [[the]]activity from the replay logic to the [[a]]transmission medium.

10.   **(Cancelled)**

11.   **(Currently Amended)**   An analyzer as recited in claim 1 wherein said trigger logic is adapted [[able]]to recognize, for comparison purposes, patterns of activity that consist of a single event and patterns of activity that consist of a sequence of events.

12.   **(Currently Amended)**   An analyzer as recited in claim 1 wherein said trigger logic includes at least one counter for counting a [[the]]number of occurrences of an activity event as part of the ~~its activity~~ pattern comparison.

13.   **(Currently Amended)**   An analyzer as recited in claim 1 wherein said trigger logic is adapted to use ~~includes~~ time counters such that the pattern comparison is based on a ~~for using the~~ relative time of occurrence of an activity event as indicated by the time counters.~~part of its activity pattern comparison.~~

14.   **(Currently Amended)**   An analyzer as recited in claim 13[[14]] wherein said replay logic uses a [[the]]fixed time between events to output [[send]]the stored activity [[out]]with the same timing with which the stored activity was initially [[it was]]received at the data input port.

15.   **(Currently Amended)**   An analyzer as recited in claim 14[[15]] further comprising a replay output port for sending the activity from the replay logic to the [[a]]transmission medium.

16-22. **(Cancelled)**

23. **(Currently Amended)** An analyzer for analyzing activity on a transmission medium, comprising:

(a) a data input port <u>configured to receive</u> ~~for receiving~~ the activity from the transmission medium, wherein the data input port includes <u>signal conversion logic</u> ~~an adaptor pod~~ configured <u>to convert</u> ~~for converting~~ a signal type used by the transmission medium to a signal type used by the analyzer and wherein the <u>signal conversion logic</u> ~~adaptor pod~~ is further configured to <u>index at least a portion of the transmission medium activity</u>;~~at least partially aid in the performance of decoding, triggering, filtering or statistical functions,~~

(b) a trace buffer <u>configured to store</u> ~~for storing~~ said received activity;[[,]]

(c) replay logic <u>configured to replay</u> ~~for replaying~~ stored activity in said trace buffer;[[,]]

(d) a control port <u>configured to permit</u> ~~for permitting~~ a user to define a data pattern to be matched in said received activity;[[,]] and

(e) trigger logic <u>configured to trigger</u> ~~for triggering~~ an action based on a match between said data pattern and said replayed activity, wherein said trigger logic <u>is further configured</u> ~~includes the ability~~ to latch address information of said match to a storage area, wherein said storage area is a FIFO~~, wherein said trigger logic has the ability to find multiple matches in said replayed activity~~.

24-26. **(Cancelled)**

27. **(Currently Amended)** An analyzer as recited in claim <u>23</u>[[24]] wherein said replay <u>logic is adapted to terminate a replay</u> function ~~terminates~~ on finding a match.

28. **(Currently Amended)** An analyzer as recited in claim <u>23</u>[[24]] further comprising means for performing additional analysis of said stored activity.

29. **(Currently Amended)** An analyzer as recited in claim <u>28</u>[[27]] wherein said means for performing additional analysis includes <u>means for creating</u> ~~the ability to create~~ a histogram.

30.   **(Currently Amended)**   An analyzer as recited in claim 28[[27]] wherein said means for performing additional analysis uses the same circuitry as said replay and trigger logic.

31.   **(Currently Amended)**   An analyzer as recited in claim 28[[27]] wherein said means for performing additional analysis includes means for real time protocol monitoring.

32.   **(Currently Amended)**   An analyzer as recited in claim 28[[27]] wherein said means for performing additional analysis includes means for real time statistical analysis.

33.   **(Currently Amended)**   An analyzer as recited in claim 28[[27]] wherein said means for performing additional analysis includes means for traffic generation.

34.   **(Currently Amended)**   An analyzer as recited in claim 23[[24]] wherein said replay logic function is carried out by a computer chip other than a microprocessor.

35.   **(Currently Amended)**   An analyzer as recited in claim 23[[24]] wherein said replay logic is implemented in computer hardware.

36.   **(Currently Amended)**   An analyzer as recited in claim 23[[24]] wherein the analyzer is adapted to use [[used]]shared hardware to perform real time monitoring, preparation of statistical information, post-capture analysis and to replay the stored activity.replaying saved traffic from a transmission medium.

37.   **(Currently Amended)**   A [[An]]replay analyzer comprising:

a data input port for receiving data from a transmission medium, wherein the data input port includes means an adaptor pod configured for converting a signal type used by the transmission medium to a signal type used by the analyzer and wherein the means for indexing at least a portion of the transmission medium data;adaptor pod is further configured to at least partially aid in the performance of decoding, triggering, filtering or statistical functions,

a trace buffer for storing data;[[,]]

term logic;[[,]]

at least one event statistic counter;[[,]]

selective capture logic for determining which data to store in said trace buffer:[[,]]

replay logic for replaying data stored in said trace buffer:[[,]]

a trigger <u>adapted to trigger</u> for triggering on a match with replayed data:[[,]] and

a timestamp counter.

38. **(Cancelled)**

39. **(Currently Amended)** An analyzer as recited in claim <u>37</u>[[36]] further comprising a timestamp upcounter.

40. **(Currently Amended)** An analyzer as recited in claim <u>37</u>[[36]] further comprising a control port for allowing user control of the analyzer.

41. **(Currently Amended)** An analyzer as recited in claim <u>37</u>[[36]] wherein said replay trigger <u>is adapted</u> includes the ability to identify specific data values or events.

42. **(Cancelled)**

43. **(Currently Amended)** An analyzer as recited in claim <u>37</u>[[36]] wherein said term logic performs pattern recognition for the analyzer.

44. **(Currently Amended)** An analyzer as recited in claim <u>37</u>[[36]] wherein said <u>at least one</u> event statistic counter <u>is adapted to provide</u> provides long term statistics regarding types of events that are occurring, each event type being defined by a term.

45. **(Currently Amended)** An analyzer as recited in claim <u>44</u>[[43]] wherein said terms are selected from the group consisting of command packets, addresses, data transfers, and signal assertions.

46. **(Currently Amended)** An analyzer as recited in claim <u>37</u>[[36]] wherein said selective capture logic uses terms from said term logic to capture only incoming activity that matches predefined or user patterns.

47.   **(Currently Amended)**   An analyzer as recited in claim 37[[36]] further comprising a trigger sequencer that is capable of triggering said trigger.

48.   **(Currently Amended)**   An analyzer as recited in claim 47[[46]] wherein said trigger sequencer is adapted to [[can]]terminate writing to or reading from said trace buffer.

49.   **(Currently Amended)**   An analyzer as recited in claim 37[[36]] wherein the analyzer has a capture mode and a replay mode that are user-selectable.

50.   **(Currently Amended)**   An analyzer as recited in claim 37[[36]] wherein said replay logic permits selection of data flow source and direction.

51.   **(Currently Amended)**   An analyzer as recited in claim 50[[49]] wherein said data flow source and direction may be selected from (i) a flow starting at said data input port, and to said term logic and said trace buffer, or (ii) from said trace buffer to said trigger.

52.   **(Currently Amended)**   An analyzer as recited in claim 37[[36]] further comprising a replay output port.

53.   **(Currently Amended)**   An analyzer as recited in claim 52[[51]] further comprising an output adapter means[[pod]];

wherein said replay output port and said output adapter means[[pod]]are in data communication with each other so as to transmit [[that]]data from may exit the analyzer through said output port and through said output adapter means[[pod]]to a bus in order to facilitate traffic generation on the [[a]]bus.

54.   **(Currently Amended)**   An analyzer as recited in claim 53[[52]] wherein activity stored in said trace buffer is may be used to generate traffic on a bus.

55.   **(Currently Amended)**   An analyzer as recited in claim 37[[36]] further comprising a control port through which a local or remote user can configure analyzer logic.

56.   **(Currently Amended)**   An analyzer comprising:

a control port <u>adapted</u> to permit user configuration of the analyzer,

a data input port <u>configured to receive a plurality of data channels</u> ~~for receiving data~~ from a transmission medium, wherein the data input port includes <u>adaptor logic</u> ~~an adaptor pod configured for converting a signal type used by the transmission medium to a signal type used by the analyzer and wherein the adaptor pod is further~~ configured to <u>group select ones of the plurality of data channels in dependence on a protocol of the received data;</u> ~~at least partially aid in the performance of decoding, triggering, filtering or statistical functions,~~

a trace buffer <u>configured to store</u> ~~for storing~~ data from said data input port<u>;</u>[[,]]

trace buffer control logic <u>configured to determine</u> ~~for determining~~ which data from said data input port to store in said trace buffer<u>;</u>[[,]]

replay logic <u>configured to replay</u> ~~for replaying~~ data stored in said trace buffer<u>;</u>[[,]]

term logic <u>configured to match</u> ~~for matching~~ a desired term with replayed data<u>;</u>[[,]] and

a trigger sequencer <u>configured to use</u> ~~that uses~~ state machine architecture to trigger on an event.

57.   **(Currently Amended)**   An analyzer as recited in claim <u>56</u>[[55]] further comprising a selective capture feature.

58.   **(Currently Amended)**   An analyzer as recited in claim <u>56</u>[[55]] wherein said term logic <u>is adapted to perform</u> ~~performs~~ event pattern recognition.

59.   **(Currently Amended)**   An analyzer as recited in claim <u>58</u>[[57]] wherein said events are selected from the group consisting of high, low, rising edge, falling edge, either edge and dontcare.

60.   **(Currently Amended)**   An analyzer as recited in claim <u>56</u>[[55]] further comprising selective capture logic.

61.   **(Currently Amended)**   An analyzer as recited in claim 56[[55]] wherein the analyzer has at least one data capture mode selected from the group consisting of state mode, transitional timing mode, and fixed frequency mode.

62.   **(Currently Amended)**   An analyzer as recited in claim 56[[55]] further comprising trigger logic that asserts a trigger signal when data presented to it matches a predefined pattern or sequence.

63.   **(Currently Amended)**   An analyzer as recited in claim 56[[55]] further comprising stop logic.

64.   **(Currently Amended)**   An analyzer as recited in claim 56[[55]] further comprising trigger logic.

65.   **(Cancelled)**

66.   **(Currently Amended)**   An analyzer as recited in claim 56[[55]] further comprising an event statistics counter which generates statistical information based on replayed data.

67.   **(Currently Amended)**   An analyzer as recited in claim 56[[55]] wherein said replay logic selects whether data presented to internal functions of the analyzer comes from said trace buffer or from said data input port.

68.   **(Currently Amended)**   An analyzer as recited in claim 56[[55]] wherein said trace buffer control logic includes stop logic, an address controller, and a memory controller.

69.   **(Currently Amended)**   An analyzer as recited in claim 56[[55]] wherein said trace buffer control logic latches an address value of replay data.

70.   **(Currently Amended)**   An analyzer as recited in claim 69[[68]] wherein said address value is latched to a FIFO.

71.   **(Currently Amended)**   An analyzer as recited in claim <u>56</u>[[55]] wherein the analyzer is <u>adapted to replay</u> ~~capable of replaying~~ traffic using the same timing that <u>the traffic</u> [[it]]was captured with.

72.   **(Currently Amended)**   An analyzer as recited in claim <u>56</u>[[55]] wherein the analyzer <u>is adapted to</u> [[can]]perform [[any]]decoding, flagging, finding, sorting, statistics and/<u>or</u> filtering operations ~~of which it is capable~~ using triggering and/<u>or</u> counting hardware that are also used for data capture purposes.

73.   **(Currently Amended)**   An analyzer for capturing activity on a transmission medium, comprising:

[[(a)]]a data input port <u>configured to receive</u> ~~for receiving~~ the activity <u>in a plurality of channels</u> from the transmission medium, wherein the data input port includes <u>adaptor logic</u> ~~an adaptor pod configured for converting a signal type used by the transmission medium to a signal type used by the analyzer and wherein the adaptor pod is further~~ configured to <u>group select ones of the plurality of channels in dependence on a protocol of the received activity;</u>~~at least partially aid in the performance of decoding, triggering, filtering or statistical functions,~~

<u>a control port for controlling modes of operation of the analyzer and for accepting user-defined patterns of activity for triggering; and</u>

[[(b)]]replay logic <u>configured to receive</u> ~~for receiving~~ the <u>transmission medium</u> activity from the data input port<u>, receive</u> ~~and receiving~~ stored activity from a trace buffer<u>,</u> and <u>select</u> ~~sending out~~ one or the other of <u>the transmission medium activity and the stored activity to output</u> ~~these activities~~ to [[the]]trigger logic, but not both<u>; and</u>[[,]]

<u>trace buffer control logic configured to cause activity received by said replay logic to be read from or written to said trace buffer,</u>

[[(c) a]]<u>wherein said</u> trace buffer <u>is configured to receive at least a portion of the transmission medium</u> ~~for receiving~~ activity from said replay logic<u>, store the at least a portion of transmission medium activity,</u> ~~and storing it, and~~ <u>send</u> ~~for sending~~ stored activity to said replay logic<u>,</u> and [[to]]<u>send stored activity to</u> a data output port <u>for processing or display, and</u>

[[(d)]]<u>wherein said</u> trigger logic <u>is configured to compare a</u> ~~for comparing~~ [[the]]pattern of activity <u>received</u> from the replay logic with a <u>first</u> user-defined pattern of activity and <u>to indicate when the comparison results in a</u> ~~indicating when they~~ match, wherein said trigger logic

is adapted to use ~~includes~~ time counters <u>such that the pattern comparison is based on a</u> ~~for using the~~ relative time of occurrence of an activity event as <u>indicated by the time counters.</u> ~~part of its activity pattern comparison,~~

~~(e) trace buffer control logic for causing activity from said replay logic to be either read from or written to said trace buffer,~~

~~(f) a data output port for transferring stored activity in the trace buffer elsewhere for processing or display, and~~

~~(g) a control port for controlling modes of operation of the analyzer and for accepting user-defined patterns for triggering.~~

74.   **(Currently Amended)**   An analyzer as recited in claim <u>73</u>[[72]] wherein said trace buffer control logic includes logic for overwriting previously stored activity with new activity.

75.   **(Currently Amended)**   An analyzer as recited in claim <u>73</u>[[72]] wherein said trace buffer control logic includes logic for avoiding overwriting previously stored activity with new activity.

76.   **(Currently Amended)**   An analyzer as recited in claim <u>73</u>[[72]] further comprising selective capture logic <u>adapted to cause</u> ~~for causing~~ the trace buffer control logic to cause [[the]]activity from the replay logic to be written to the trace buffer only when the activity from said replay logic matches a second user-defined pattern of activity.

77.   **(Currently Amended)**   An analyzer as recited in claim <u>76</u>[[75]] wherein said selective capture logic is <u>further adapted to cause</u> ~~capable of causing~~ information about the type of activity from the replay logic that caused the activity to be written to said trace buffer to be incorporated into the activity stored in the trace buffer.

78.   **(Currently Amended)**   An analyzer as recited in claim <u>76</u>[[75]] further comprising a timestamp counter for creating information about <u>a</u> [[the]]time of occurrence of each activity event from the replay logic, so that such information may be incorporated into [[the]]activity stored in said trace buffer.

79.   **(Currently Amended)**   An analyzer as recited in claim <u>78,</u>[[77,]]
wherein said trigger logic includes time counters for incorporating <u>a </u>[[the]]relative time
of occurrence of an activity event as part of <u>the </u>~~its activity~~ pattern comparison, and
        wherein said replay logic uses said stored time-of-occurrence information to control <u>a</u>
<u>replay timing.</u>~~the timing of the replay.~~

80.   **(Currently Amended)**   An analyzer as recited in claim <u>78</u>[[77]] wherein said
replay logic uses the stored time-of-occurrence information to control <u>a replay timing.</u>~~the timing~~
~~of the replay.~~

81.   **(Currently Amended)**   An analyzer as recited in claim <u>80</u>[[79]] further comprising
a replay output port for sending [[the]]activity from the replay logic to <u>the </u>[[a]]transmission
medium.

82.   **(Currently Amended)**   An analyzer as recited in claim <u>73</u>[[72]] wherein activity
events are stored at a fixed frequency, thereby providing a fixed time between events.

83.   **(Currently Amended)**   An analyzer as recited in claim <u>73</u>[[72]] wherein said
trigger logic is <u>adapted </u>[[able]]to recognize, for comparison purposes, patterns of activity that
consist of a single event and patterns of activity that consist of a sequence of events.

84.   **(Currently Amended)**   An analyzer as recited in claim <u>73</u>[[72]] wherein said
trigger logic includes at least one counter for counting <u>a </u>[[the]]number of occurrences of an
activity event as part of <u>the </u>~~its activity~~ pattern comparison.

85.   **(Currently Amended)**   An analyzer as recited in claim <u>73</u>[[72]] wherein said
replay logic uses <u>a </u>[[the]]fixed time between events to <u>output </u>[[send]]the stored activity
[[out]]with the same timing with which <u>the stored activity was initially </u>[[it was]]received at the
data input port.

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86.   **(Currently Amended)**   An analyzer as recited in claim 85[[84]] further comprising a replay output port for sending the activity from the replay logic to the [[a]]transmission medium.

87.   **(New)** An analyzer as recited in claim 1, wherein the signal conversion logic is configured to index at least a portion of the transmission medium activity by generating count bits for respective segments of data in the transmission medium activity and sending the transmission medium activity to the replay logic with the generated count bits.

88.   **(New)** An analyzer as recited in claim 56, wherein the transmission medium is a gigabit bus and wherein the adaptor logic is configured to group select ones of the plurality of data channels such that a coding used by the gigabit bus is decoded by the adaptor logic.